

1/15

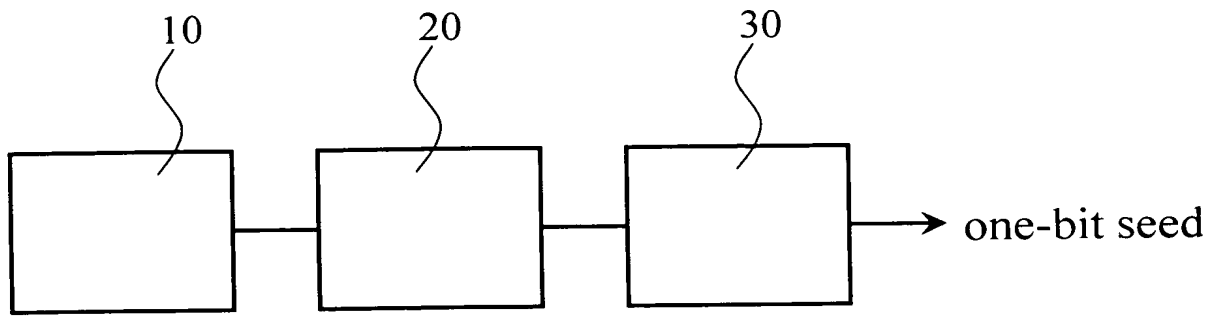
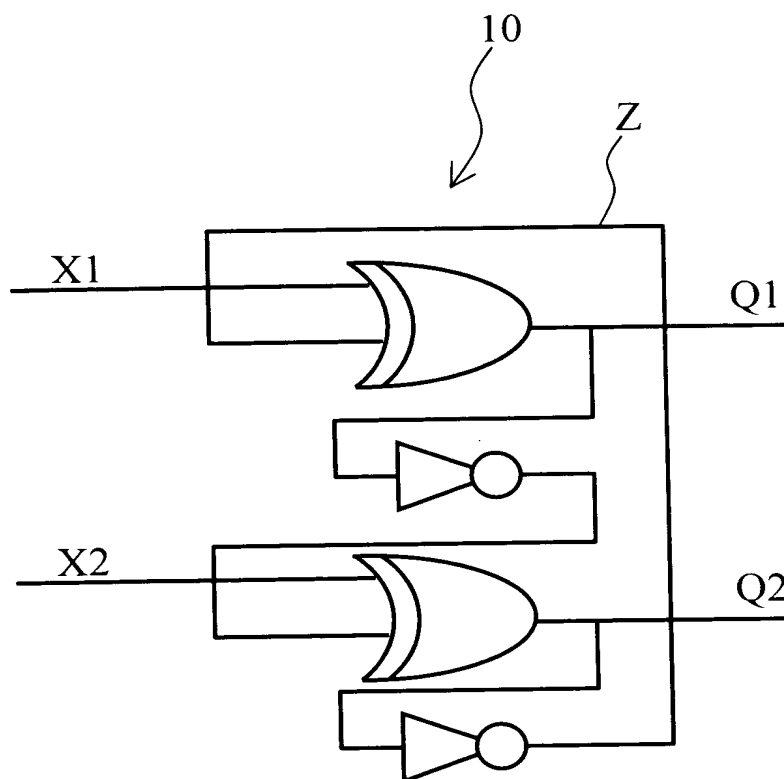


FIG.1

2/15



If  $X1=X2$ ,  
an operation equivalent to a flip-flop having even  
inverters

In the case of  $Z=1$

- when  $X1=X2$ ,  $Q1=0$ ,  $Q2=0$
- when  $X1=X2=0$ ,  $Q1=1$ ,  $Q2=0$

In the case of  $Z=0$

- when  $X1=X2$ ,  $Q1=1$ ,  $Q2=1$
- when  $X1=X2=0$ ,  $Q1=1$ ,  $Q2=0$

If  $X1 \neq X2$ ,  
an operation as a ring oscillator

FIG.2

3/15

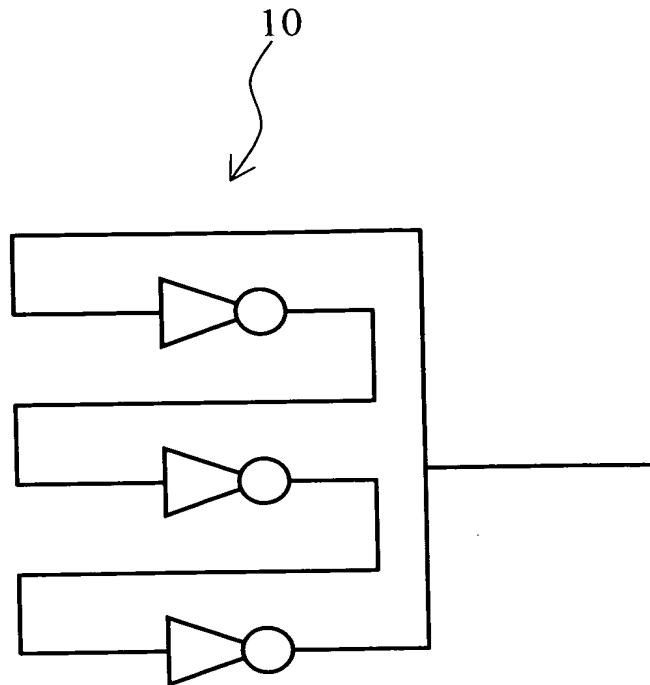
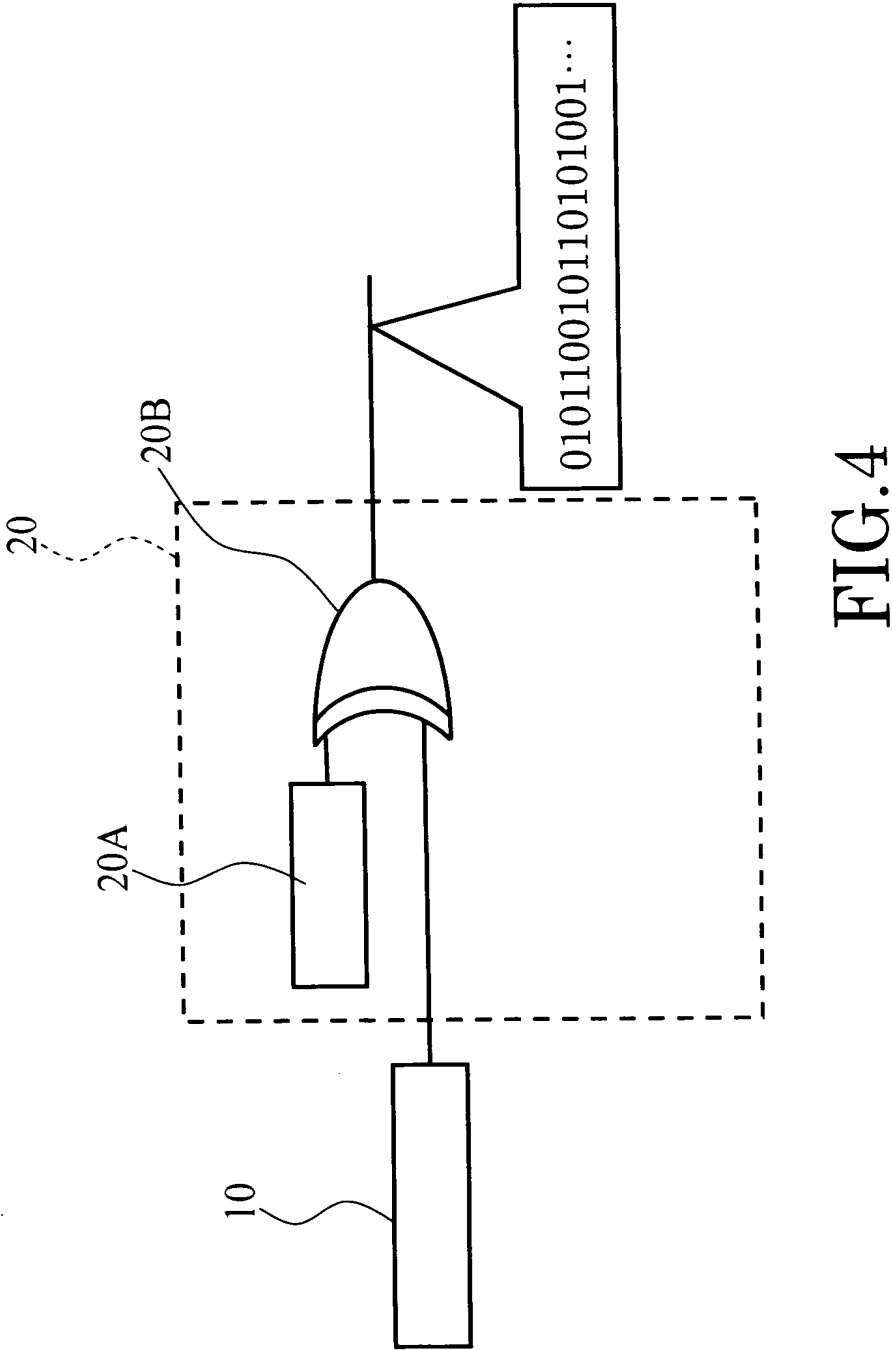


FIG.3



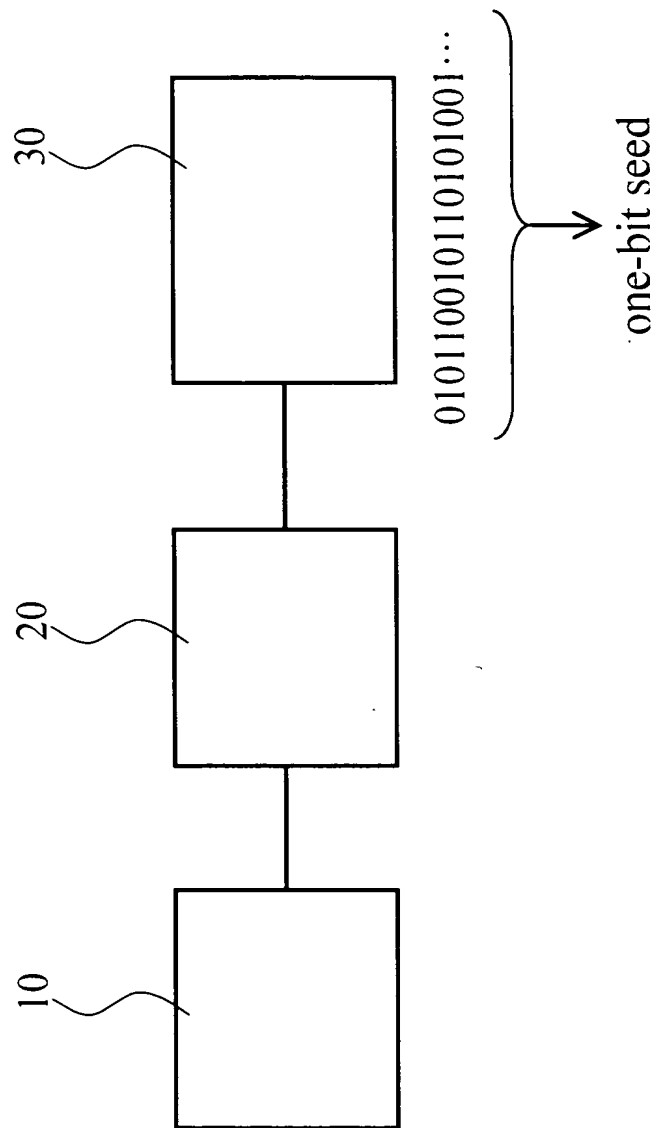


FIG.5

6/15

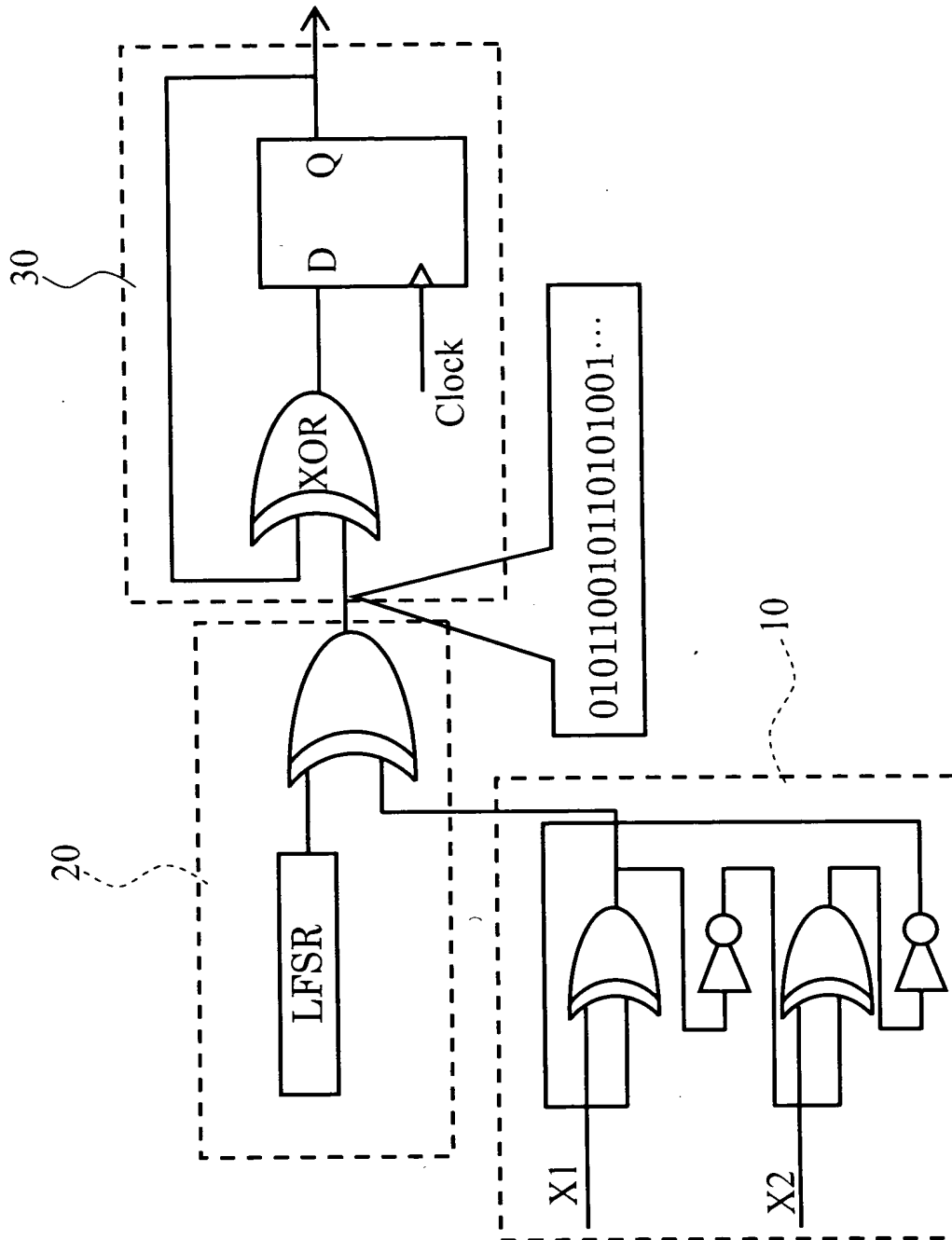


FIG.6

7/15

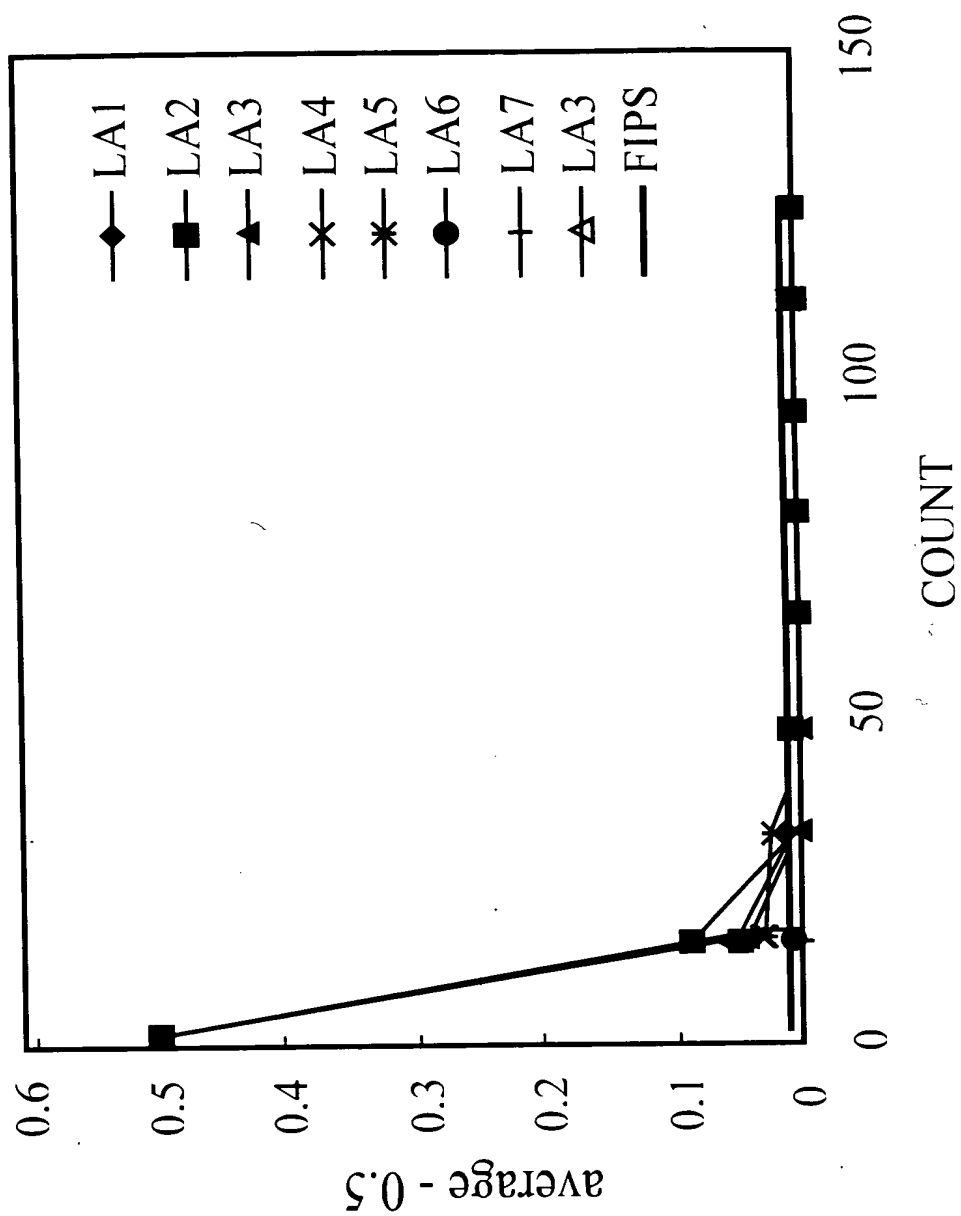


FIG.7

8/15

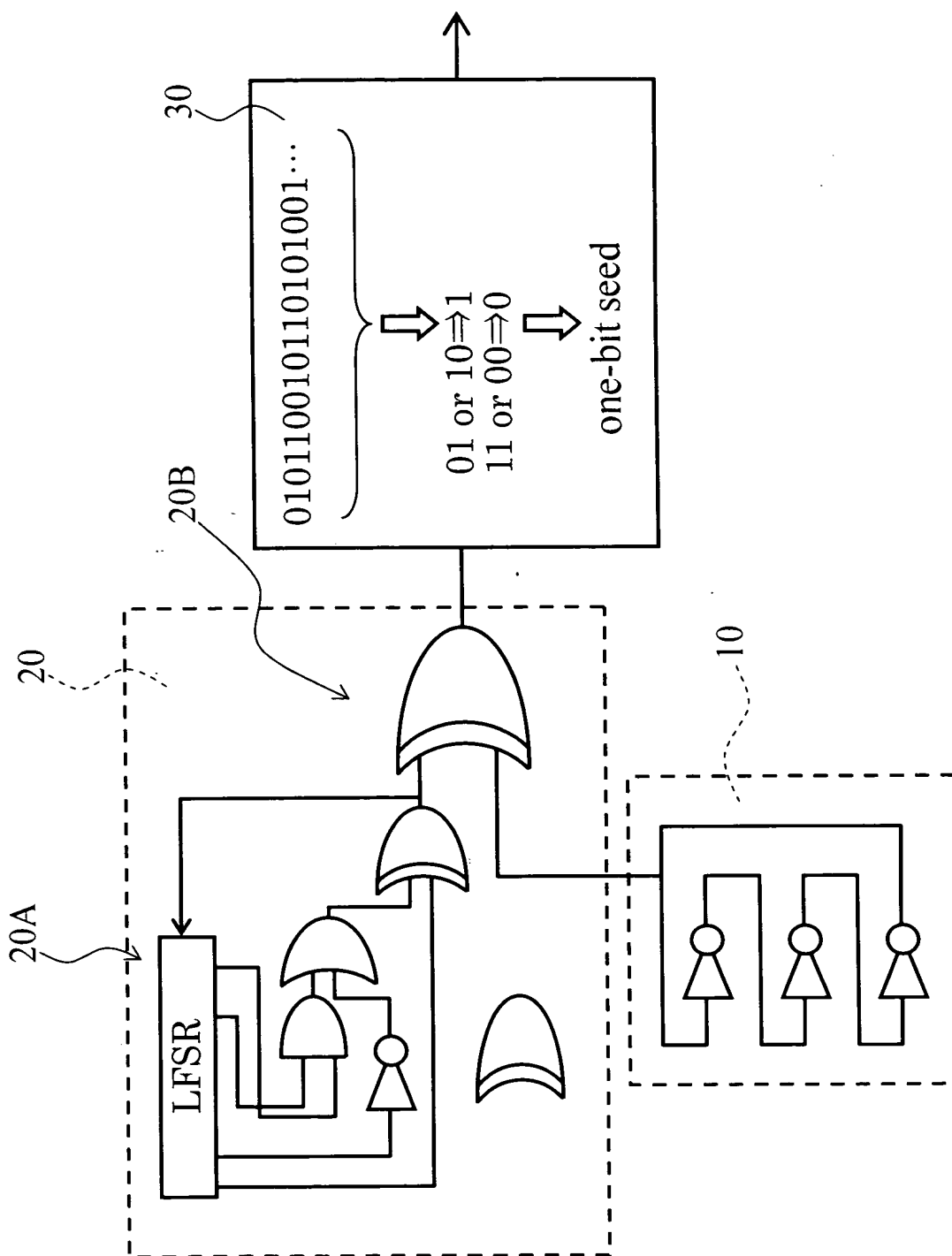


FIG. 8



9/15

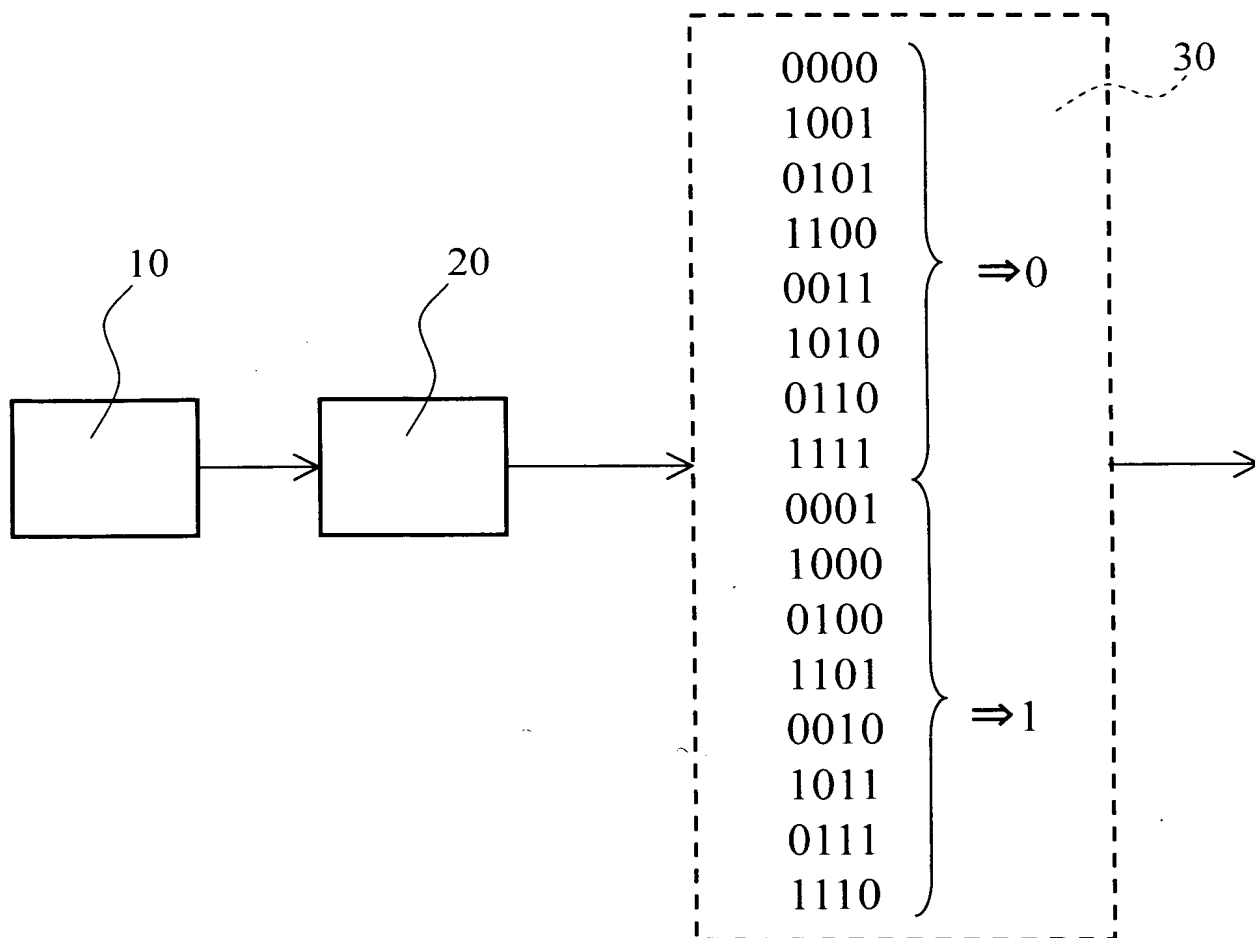


FIG.9

10/15

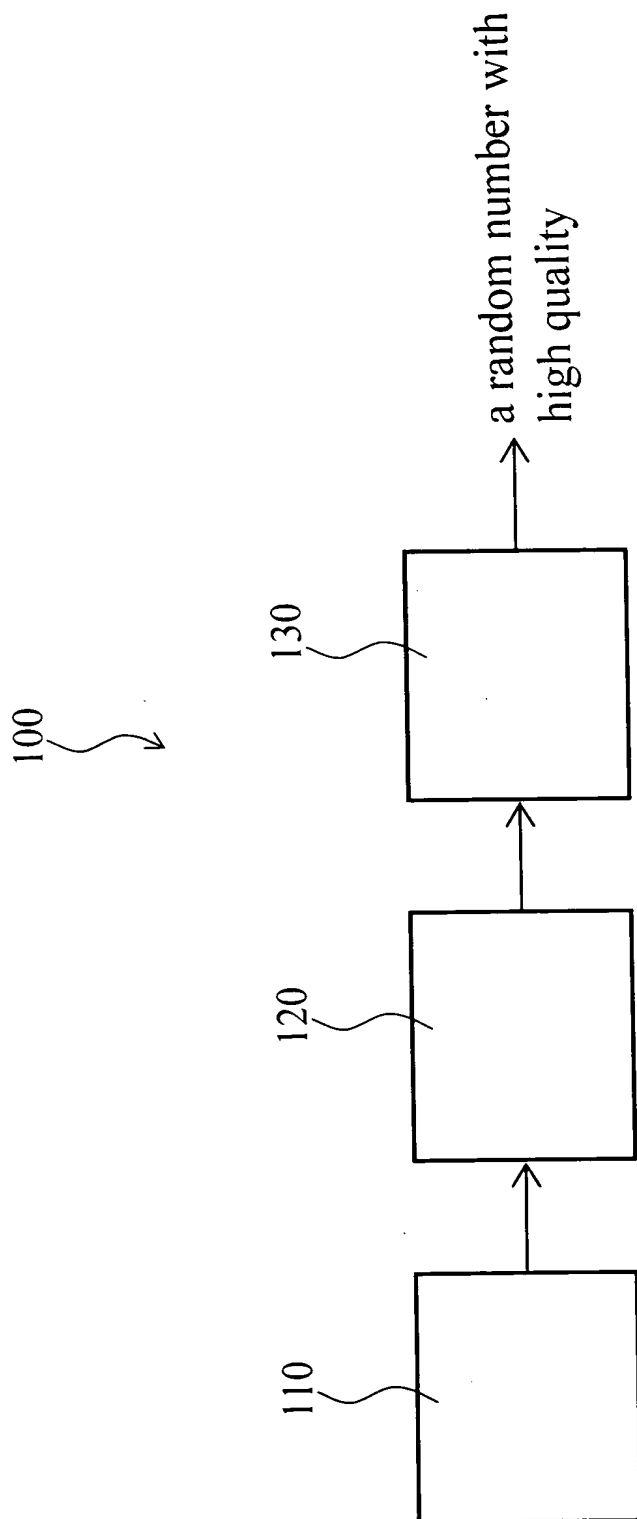


FIG.10

11/15

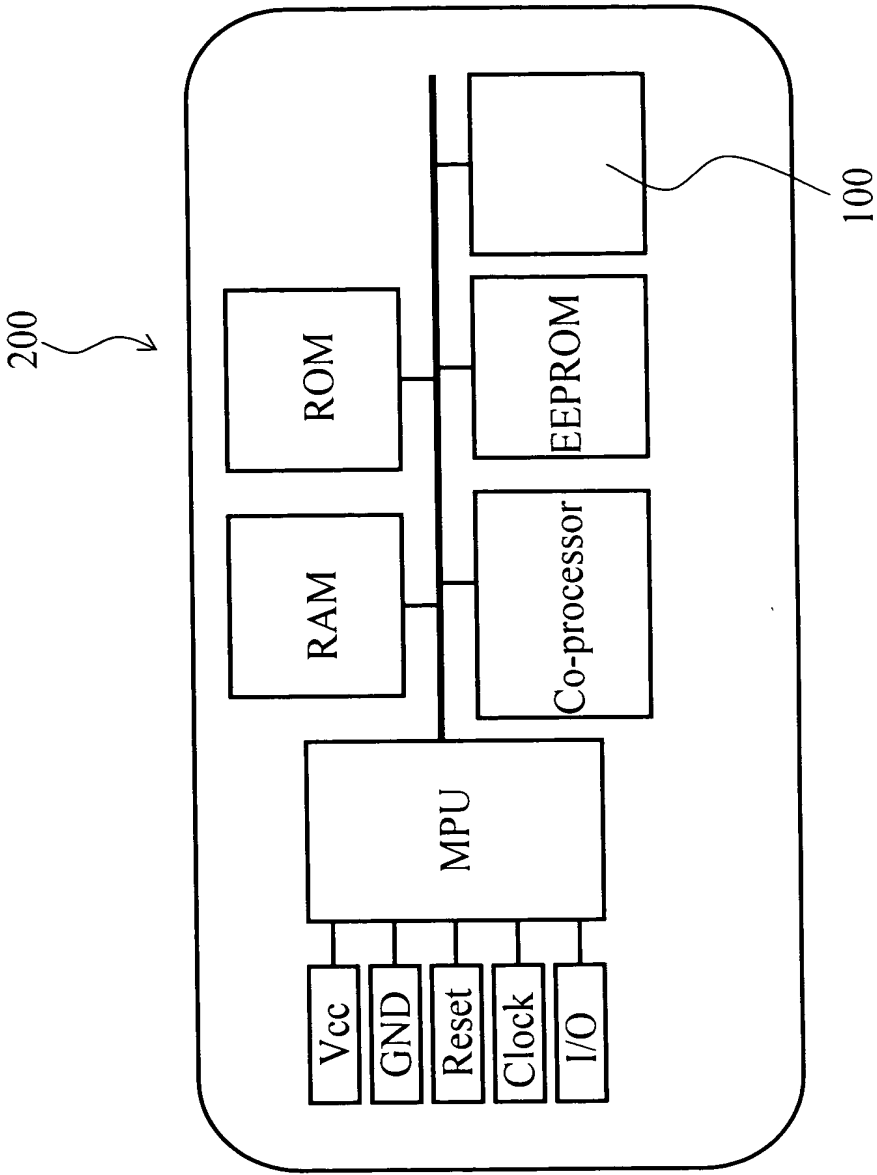


FIG.11

12/15

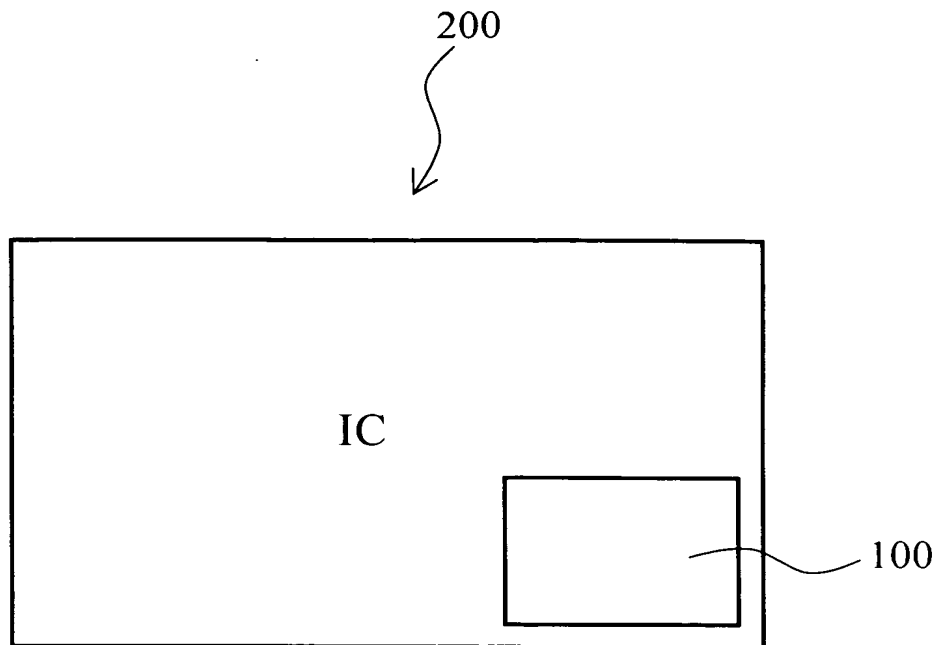


FIG. 12

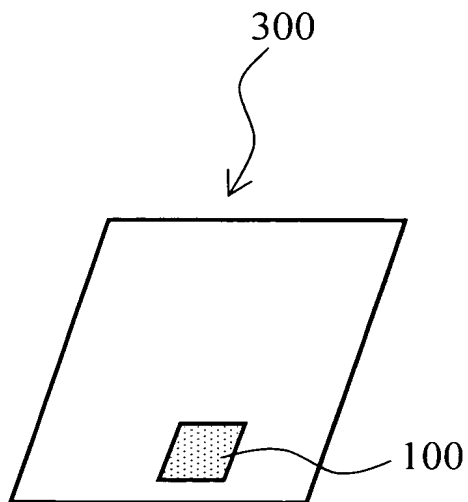


FIG. 13

13/15

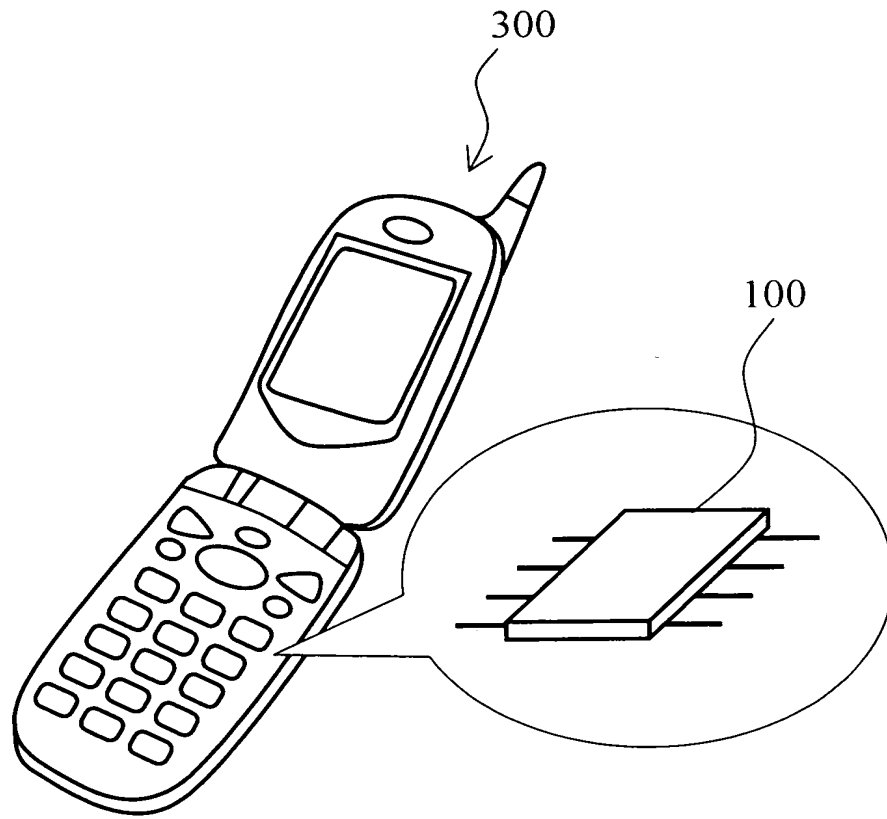


FIG.14

14/15

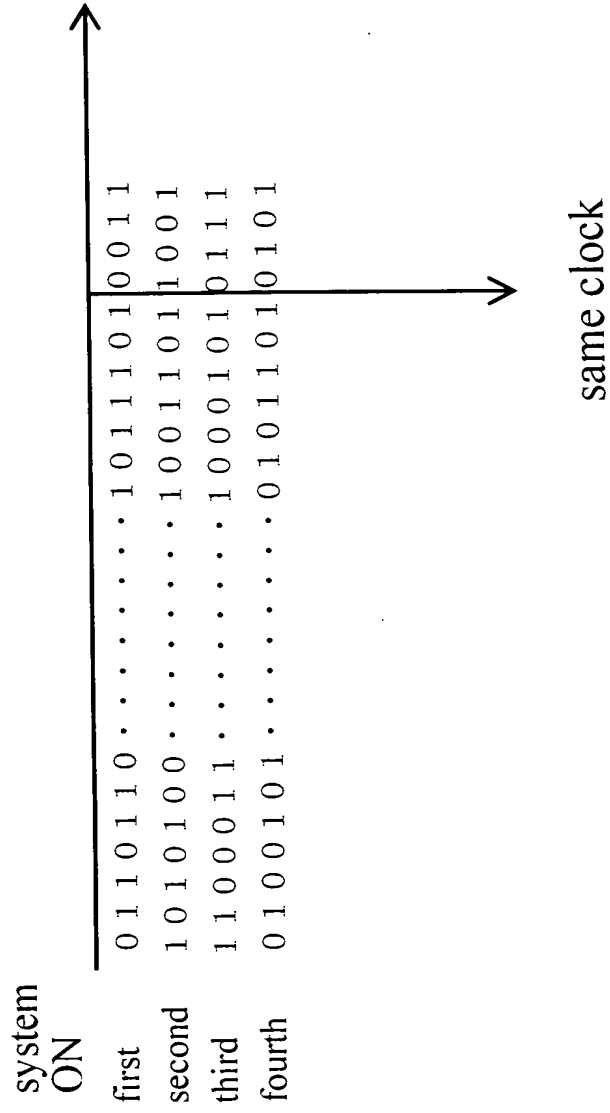


FIG.15

